

## HUMIC ACIDS AND DRILLING FLUIDS

Humic acids are widely used in drilling fluids as dispersants, fluid loss additives, and emulsion stabilizers. Most users are more familiar with the name lignite than they are with humic acid.

Humic acids are complex organic molecules that are formed by the breakdown of organic plant matter such as cellulose, starch, etc. The exact structure of humic acids are unknown. They represent an extremely variable group of organic acids.

Humic acids generally include all colloidal acids derived from humus including humic acid, fulvic acid and ulmic acid. These acids are generally differentiated by their solubility in various solvents.

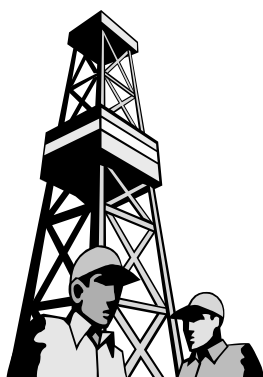
In normal drilling use, lignite or humic acids are water solubilized with sodium hydroxide. The products are used in this form for water based drilling fluids. However, if the humic acids are reacted with high molecular weight organic cations, such as amines, they become dispersible/soluble in oils. As a result, they retain many of their colloidal properties in oil.

Venture Chemicals, Inc. specializes in the manufacturing and marketing of organolignites (organohumates). Call us today and ask us how our specialty products can work for you.

## VEN-K™: POTASSIUM LIGNITE

The potassium ion has long been accepted as having a significant inhibiting effect on swelling-type shales. As a result, potassium based drilling fluids have become widely utilized in the process of stabilizing such shales.

Many types of potassium based fluids have been developed over the years. These include: potassium chloride polymer muds, potassium hydroxide/lime muds, saturated potassium chloride systems, potassium acetate fluids, potassium carbonate muds and potassium formate systems. Although most of these muds vary widely in composition and properties, all of them depend on the inhibitive effects of the potassium ion.



The drilling industry generally accepts the fact that it is desirable to eliminate or at least minimize the addition of compounds containing the more dispersive sodium ion. This is the reason that more and more drilling fluid additives such as viscosifiers, fluid loss additives, dispersants, lubricants, etc. are being offered as the potassium salt rather than the more common and less expensive sodium salt. Lignite based products are commonly used in potassium based systems to provide some fluid loss properties as well as some control over rheological properties.

Naturally occurring lignite is slightly acidic because it contains a series of complex organic acids collectively referred to as "humic acids." When an alkaline material such as sodium hydroxide is added to lignite, it reacts to form the highly water soluble, sodium salt that is referred to as sodium humate.

Because of the interest in low sodium containing lignite derivatives, Venture Chemicals, Inc. introduced VEN-K™ in the late 1970's. VEN-K™ is a potassium humate (lignite) formed by the reaction of potassium hydroxide with highly oxidized lignite. The result is an efficient, multi-purpose mud conditioner for water based muds.

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## SUN SAFE TIPS FOR THE WORKPLACE



Sun safe employees will be less likely to miss work due to skin cancer and cataract related medical problems. Here are some ideas to make your workplace sun safe:

Provide shade wherever possible. Portable shade structures are helpful for outdoor workers.

Encourage workers to wear sun-protective clothing (long-sleeved shirts, long pants, hats, and sunglasses) everyday when they are working outside.

Encourage workers to wear a high SPF (SPF 15 or higher) sunscreen, wide-brimmed hats, sunglasses, and high SPF lip balm everyday.

Provide sunscreen, lip balm, hats and sunglasses for employees who spend a lot of time in the sun.

Monitor the daily UV index for your locale and adjust outdoor work schedules during peak sun intensity hours or on high UV days.

Get input from employees about ideas they have on making worksites sun safe.

Develop and distribute a sun safe worksite policy.

- [www.americansun.org](http://www.americansun.org)

## PRODUCT CORNER

### VEN-K

**VEN-K™** is a highly water soluble lignite that is effective in water based drilling fluid systems where there is a need to minimize sodium ion concentration. Replacement of sodium ions in water based fluids will generally assist in minimizing shale hydration problems.

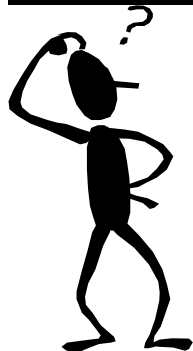
**VEN-K™** is primarily used as a fluid loss additive with some secondary ability to control rheological properties in certain water based drilling fluid systems.

**VEN-K™** can also be used to control HTHP fluid loss in almost all types of potassium based drilling fluids. In addition, it can be used to emulsify oils or other non-aqueous lubricants.

If you are using a potassium based drilling fluid, why not investigate the effectiveness of **VEN-K™**?

Additional information can be obtained by calling us at: **(337) 232-1977/(800) 523-1933** or faxing us at: **(337) 237-5340**.

## THOUGHT TICKLERS



"It's time to start living the life we've imagined."

- Henry James

"The hardest struggle of all is to be something different from what the average man is."

- Charles Schwab

"Every man believes that he has a greater possibility."

- Ralph Waldo Emerson

"The man who has no imagination has no wings."

- Muhammad Ali

"What's important is that one strives to achieve a goal."

- Ronald Reagan

"To create one's own world takes courage."

- Georgia O'Keeffe

### IN EUROPE AND THE MIDDLE EAST PLEASE CONTACT OUR DISTRIBUTOR:

RichKeen Chemicals Ltd.  
33 Chapmans Crescent  
Chesham Bucks, U.K. HP5 2QT

TEL: 44- (0) 1494-678669 - ( (0) dialed in U.K.)  
FAX: 44- (0) 1494-786503 - ( (0) dialed in U.K.)  
Email: [RichkeenC@aol.com](mailto:RichkeenC@aol.com)

### IN VENEZUELA PLEASE CONTACT OUR DISTRIBUTOR:

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VENTURE CHEMICALS, INC. is: a basic manufacturer of specialty chemical products used in the petroleum and chemical industries. Marketing is specifically oriented toward the drilling and production industry and to select market segments of the chemical industry. VENEWS is published by Venture Chemicals, Inc., P. O. Box 53631, Lafayette, LA 70505, as a service to users of VCI products and services. All correspondence should be addressed to Shana Nicholson, Editor, VENEWS, at the above address.

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# VEN-BRIEFS

## POLYMER, HEAL THYSELF

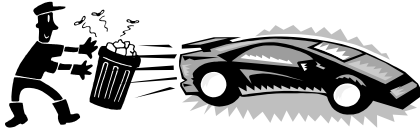
Fred Wudl, a professor at UCLA has announced the discovery of "Automend," a new polymer that has it's intermonomer linkages disconnect at 120° C, then reconnect at room temperature, mending cracks.

"Automend" is different than other self-healing polymers because the self-healing property is intrinsic to the polymer, making it cheaper to produce.

It's estimated that after the first mend, the resulting piece retains 60% of it's original strength and deteriorates with subsequent re-mending. Further research and development will continue.

- [www.chemweb.com](http://www.chemweb.com)

## GARBAGE AS FUEL??



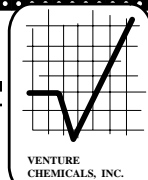
Waste from sewage plants could be transformed into clean hydrogen fuel with high efficiency using new processing technology devised by researchers in the Process Technology Group at Warwick University, UK.

The process involves extracting hydrogen from "wet" waste that which contains large amounts of water, such as sewage or paper mill waste.

The team expects to have constructed the first prototype, with the capacity to generate as much fuel as a gas station by 2005.

- [www.newscientist.com](http://www.newscientist.com)

## CHARTS-N-TABLES



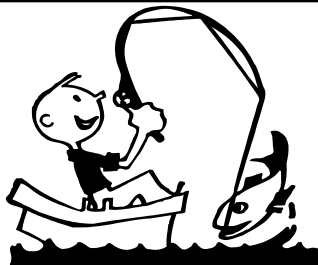
EFFECTS OF SOME ADDITIVES ON THE PHYSICAL PROPERTIES OF OIL WELL CEMENTS

# minor effect  
X major effect

	BENTONITE	PERLITE	SAND	BARITE	HEMATITE	CALCIUM CHLORIDE	SODIUM CHLORIDE*	LIGNOSULFONATES	CMHEC**	DIESEL	DIATOMACEOUS EARTH	LOW-WATERLOSS MATERIALS	LOST CIRCULATION MATERIALS
<b>DENSITY</b>													
DECREASE	X	X											X
INCREASE			X	X	X		#						
<b>WATER REQUIRED</b>													
LESS													
MORE	X	#	#	#								X	#
<b>VISCOSITY</b>													
DECREASE								#	X				
INCREASE	#	#	#	#	#							#	#
<b>THICKENING TIME</b>													
ACCELERATED	#					X	X						
RETARDED								#	X	X	#	#	#
<b>EARLY STRENGTH</b>													
DECREASED	#	#	#				X	X	#	#	#	#	#
INCREASED						X	X						
<b>FINAL STRENGTH</b>													
DECREASED	#	#	#	#			X	X	#	#	#	#	#
INCREASED													
<b>DURABILITY</b>													
DECREASED	#	#									#	#	#
INCREASED													
<b>WATER LOSS</b>													
DECREASED		X						#	X	#		X	#
INCREASED			#										#

\* small percentages of sodium chloride accelerate thickening; large percentage may retard API Class A cement.  
\*\* Carboxymethyl hydroxethyl cellulose

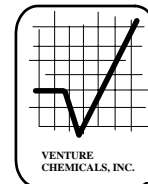
[www.eng.ksu.edu.sa/petroleum](http://www.eng.ksu.edu.sa/petroleum)



## SUMMER'S HERE!

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 Please add my name to the VENEWS mailing list



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JUNE 2002

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# Venture Chemicals, Inc.

- viscosifiers
- seepage loss additives
- fluid loss additives
- shale control additives
- lost circulation products
- emulsifiers
- oil based products
- wetting agents
- flocculants
- dispersants
- lubricants
- spotting fluids/additives

## VEN-K™

a potassium lignite for your  
water based drilling fluid system

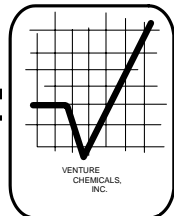
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Call us today for more information  
on how our products can help you!

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